

REMARKS

Applicant and the undersigned would like to extend their thanks for the courtesy of the Examiner in granting a personal interview on August 8, 2006, at which the invention was discussed and an operating device embodying the invention was demonstrated. Although no pending claims were discussed at that interview, Applicant did discuss with the Examiner the general nature of eye safety in the context of a laser device, where International Standard IEC 60825.1 has been developed to calculate the Maximum Permissible Exposure (MPE) the human eye can sustain before risk of retinal injury occurs. Under that standard, Class 4 lasers pose the highest risk of retinal injury and require warning labels. Use of special protective goggles is essential for Class 4 lasers. At the opposite end of the scale, Class 1 lasers pose no risk of retinal injury and require no warning labels or protective goggles.

Applicant discussed with the Examiner a report, prepared by the independent French testing agency CETA, which confirmed that the device demonstrated to the Examiner is in fact a Class 1 laser device. Therefore, the device is believed to be the first such device which is: (1) eye safe as that term is defined under the international standard, usually referred to as International Standard IEC 60825.1, "Safety of Laser products – Part 1: Equipment classification, requirements and user's guide", Edition 1.2, August 2001 (see page 47 of applicant's Specification), including being eye safe for the patient, as well as all bystanders, operators, etc.; and (2) is effective for performing a dermatologic treatment such as hair removal (or

hair-regrowth-inhibition). A copy of page 53 of IEC 60825.1 is attached hereto for the convenience of the Examiner, and sets forth the standard for determining whether a source is eye safe as used in applicant's claims.

The Examiner is also thanked for his courtesy during a second interview on August 23, 2006, during which agreement was reached on claim 79 as formally presented herewith. For the sake of clarity and convenience of review, a new set of claims 79-114 has been presented. It is believed that each of these newly-presented claims properly encompasses the legitimate scope of the invention and defines over the art. As such, it is believed that each of the pending claims is in condition for allowance, and early notification to that effect is earnestly solicited.

It is noted that, following the interview, Examiner Johnson provided to Examiner Shay a copy of U.S. Patent Application Publication 2004/0036975 ("Slatkine"), which was cited by prior counsel in this application in an IDS. Slatkine teaches an add-on device to the type of laser typically used under doctors' supervision. Slatkine's Abstract, Field of the Invention and claim 36, the only relevant independent apparatus claim (cf. claim 82 for a skin cooling apparatus) all recite that Slatkine's invention is intended to improve bodily and eye safety to bystanders. The relevant method claims in Slatkine have similar language. At column 1, paragraph 0003, Slatkine defines 'bystanders' as someone 'unaware that a laser beam is being fired'. Thus, Slatkine's bystander is neither the user of the device nor a patient, if the patient is someone other than the user. As a result, it is believed that Slatkine is irrelevant to the very specific definition of 'eye safe' required by applicant's claims, as explained above.

In view of the foregoing, it is not believed necessary to go through the many scientifically incorrect or misleading statements made in Slatkine.

In addition to the aforementioned distinction between applicant's invention and Slatkine's teachings, it is also appropriate to point out that certain of applicant's claims include numerous additional features not found in Slatkine. Thus, Slatkine does not disclose the use of a bulk scattering diffuser medium, as required by claims 82 and 110. Nor does Slatkine teach the use of an optical apparatus which distributes the light substantially uniformly across the outlet, as required by claims 84, 94 and its dependent claims 95-104, 108, 111-113, and 114. Nor does Slatkine disclose the off-axis feature required by claims 88, 103, and 109, nor the detailed features required by the remaining claims.

In the event that any issue remains which the Examiner believes could be facilitated by a telephone call, he is invited to telephone the undersigned at 650-326-4350, or on his cell phone at 650-269-5025. The cell phone is preferred, to minimize phone tag.

Respectfully submitted,



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INTERNATIONAL STANDARD

IEC
60825-1

Edition 1.2

2001-08

Edition 1:1993 consolidated with amendments 1:1997 and 2:2001

GROUP SAFETY PUBLICATION

Safety of laser products –

**Part 1:
Equipment classification, requirements
and user's guide**

Sécurité des appareils à laser –

*Partie 1:
Classification des matériels, prescriptions
et guide de l'utilisateur*



Reference number
IEC 60825-1:1993+A1:1997+A2:2001

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60825-1 © IEC:1993+A1:1997
+A2:2001(E)

C₃ = 1

400-450 nm
(λ_p < 400)

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Table 6 - Maximum permissible exposure (MPE) at the cornea for direct exposure to laser radiation a, b, c

Exposure time t in s	Wave-length λ in nm	10 ⁻¹³ to 10 ⁻¹¹	10 ⁻¹¹ to 10 ⁻⁹	10 ⁻⁹ to 10 ⁻⁷	10 ⁻⁷ to 10 ⁻⁵	10 ⁻⁵ to 10 ⁻³	10 ⁻³ to 10 ⁻¹	10 ⁻¹ to 10 ¹	10 ¹ to 10 ³	10 ³ to 10 ⁴	10 ⁴ to 3 x 10 ⁴
180 to 302.5		3 x 10 ¹⁵ W·m ⁻²									
302.5 to 315		30 J·m ⁻²									
315 to 400		C ₂ J·m ⁻² (t > T ₁)									
		C ₁ J·m ⁻²									
		C ₂ J·m ⁻²									
		10 ⁴ J·m ⁻²									
		10 W·m ⁻²									
		Retinal photochemical hazard									
		100 C ₃ J·m ⁻² using γ _p = 11 mrad									
		1 C ₃ W·m ⁻² using γ _p = 410 mrad									
		AND ^d									
		Retinal thermal hazard									
		α ≤ 1.5 mrad: 10 W·m ⁻²									
		α > 1.5 mrad: 18 C ₆ T ₂ -0.25 W·m ⁻²									
		(t ≤ T ₂)									
		18 t ^{0.75} C ₆ J·m ⁻²									
		(t > T ₂)									
		α ≤ 1.5 mrad: 10 C ₄ C ₇ W·m ⁻²									
		α > 1.5 mrad: 18 C ₄ C ₆ C ₇ T ₂ -0.25 W·m ⁻²									
		(t ≤ T ₂)									
		18 t ^{0.75} C ₄ C ₆ C ₇ J·m ⁻²									
		(t > T ₂)									
		1000 W·m ⁻²									
400 to 700 ^e		1.5 x 10 ⁻⁴ C ₆ J·m ⁻²	2.7 x 10 ⁴ t ^{0.75} C ₆ J·m ⁻²	5 x 10 ⁻³ C ₆ J·m ⁻²	18 t ^{0.75} C ₆ J·m ⁻²	400 to 600 nm ^d	400 to 700 nm ^d	400 to 600 nm ^d	400 to 600 nm ^d	400 to 600 nm ^d	400 to 600 nm ^d
700 to 1050		1.5 x 10 ⁻⁴ C ₄ C ₆ J·m ⁻²	2.7 x 10 ⁴ t ^{0.75} C ₄ C ₆ J·m ⁻²	5 x 10 ⁻³ C ₄ C ₆ J·m ⁻²	18 t ^{0.75} C ₄ C ₆ J·m ⁻²	5 x 10 ⁻³ C ₄ C ₆ J·m ⁻²	18 t ^{0.75} C ₄ C ₆ J·m ⁻²	5 x 10 ⁻³ C ₄ C ₆ J·m ⁻²	18 t ^{0.75} C ₄ C ₆ J·m ⁻²	5 x 10 ⁻³ C ₄ C ₆ J·m ⁻²	18 t ^{0.75} C ₄ C ₆ J·m ⁻²
1050 to 1400		1.5 x 10 ⁻³ C ₆ C ₇ J·m ⁻²	2.7 x 10 ⁵ t ^{0.75} C ₆ C ₇ J·m ⁻²	5 x 10 ⁻² C ₆ C ₇ J·m ⁻²	80 t ^{0.75} C ₆ C ₇ J·m ⁻²	5 x 10 ⁻² C ₆ C ₇ J·m ⁻²	80 t ^{0.75} C ₆ C ₇ J·m ⁻²	5 x 10 ⁻² C ₆ C ₇ J·m ⁻²	80 t ^{0.75} C ₆ C ₇ J·m ⁻²	5 x 10 ⁻² C ₆ C ₇ J·m ⁻²	80 t ^{0.75} C ₆ C ₇ J·m ⁻²
1400 to 1500		10 ¹² W·m ⁻²	10 ¹² W·m ⁻²	10 ¹² W·m ⁻²	10 ¹² W·m ⁻²	10 ¹² W·m ⁻²	10 ¹² W·m ⁻²	10 ¹² W·m ⁻²	10 ¹² W·m ⁻²	10 ¹² W·m ⁻²	10 ¹² W·m ⁻²
1500 to 1800		10 ¹³ W·m ⁻²	10 ¹³ W·m ⁻²	10 ¹³ W·m ⁻²	10 ¹³ W·m ⁻²	10 ¹³ W·m ⁻²	10 ¹³ W·m ⁻²	10 ¹³ W·m ⁻²	10 ¹³ W·m ⁻²	10 ¹³ W·m ⁻²	10 ¹³ W·m ⁻²
1800 to 2600		10 ¹² W·m ⁻²	10 ¹² W·m ⁻²	10 ¹² W·m ⁻²	10 ¹² W·m ⁻²	10 ¹² W·m ⁻²	10 ¹² W·m ⁻²	10 ¹² W·m ⁻²	10 ¹² W·m ⁻²	10 ¹² W·m ⁻²	10 ¹² W·m ⁻²
2600 to 10 ⁸		10 ¹¹ W·m ⁻²	10 ¹¹ W·m ⁻²	10 ¹¹ W·m ⁻²	10 ¹¹ W·m ⁻²	10 ¹¹ W·m ⁻²	10 ¹¹ W·m ⁻²	10 ¹¹ W·m ⁻²	10 ¹¹ W·m ⁻²	10 ¹¹ W·m ⁻²	10 ¹¹ W·m ⁻²

a For correction factors and units, see "Notes to tables 1 to 4", p. 40.

b The MPEs for exposure times below 10⁻⁸ s and for wavelengths less than 400 nm have been derived by calculating the equivalent irradiance from the radiant exposure limits at 10⁻⁸ s. The MPEs for exposure times below 10⁻¹³ s are set to be equal to the equivalent irradiance values of the MPEs at 10⁻¹³ s.

c The angle γ_p is the limiting angle of acceptance for the measuring instrument.

d In the wavelength range between 400 nm and 600 nm, dual limits apply and the exposure must not exceed either limit applicable. Normally photochemical hazard limits only apply for exposure durations greater than 10 s; however, for wavelengths between 400 nm and 484 nm and for apparent source sizes between 1.5 mrad and 82 mrad, the dual photochemical hazard limit of 100 C₃ J·m⁻² shall be applied for exposures greater than or equal to 1 s.